

## SPECTRAL REFLECTANCE FOR IN-SITU FILM CHARACTERISTIC MEASUREMENTS

### ABSTRACT OF THE DISCLOSURE

[0040] A method and an apparatus to determine characteristics of a film on a substrate in a processing chamber. An example of a method in accordance with one embodiment of the present invention includes impinging optical radiation upon the film, sensing optical radiation reflected from the film to form spectral signals containing information concerning interference fringes, and obtaining thickness information of the film as a function of a periodicity of the interference fringes. The apparatus includes a detector in optical communication with the processing chamber to sense optical radiation generated by the plasma, and a spectrum analyzer in electrical communication with the optical detector. The spectrum analyzer resolves the spectral bands and produces information corresponding thereto. A processor is in electrical communication with the spectrum analyzer, and a memory is in electrical communication with the processor. The memory includes a computer-readable medium having a computer-readable program embodied therein that controls the system to carry out the method.